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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,891	03/19/2004	Tomoki Nobuta	WAKAB76.003AUS	8203

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EXAMINER

PARSONS, THOMAS H

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 05/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/804,891	NOBUTA ET AL.	
	Examiner	Art Unit	
	Thomas H. Parsons	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

Page 1, line 7, suggest inserting "cell" after "electrochemical".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 6-12, 15-17, 20-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohsawa et al. (5,225,296).

Claim 1: Ohsawa et al. disclose an electrode comprising a porous conductive substrate (abstract) as well as an electrode active material (col. 8: 17-28) and a conductive auxiliary (col. 6: 65-col. 7: 2) filled in the pores in the substrate (col. 8: 66-col. 9: 1).

Claim 2: Ohsawa et al. disclose that the porous conductive substrate is a carbon fiber sheet (abstract and col. 2: 66-col. 3: 20)

Claim 3: Ohsawa et al. disclose that the porous conductive substrate before filling has a porosity of 50 to 85 % (col. 3: 45-46).

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Claim 6: Ohsawa et al. disclose that the electrode active material is a proton-conducting compound which is subjected to an oxidation-reduction reaction with ions in an electrolyte (col. 8: 17-28 which discloses the same active material as that instantly disclosed).

Claim 7: Ohsawa et al. disclose at least one of particulate carbon (i.e. carbon particles) and fibrous carbon as the conductive auxiliary (col. 2: 66-col. 3: 19).

Claim 8: Ohsawa et al. disclose an electrochemical cell (e.g., a battery), wherein at least one of electrodes is the electrode as claimed in Claim 1 above (col. 9: 40-46).

Claim 9: Ohsawa et al. disclose that the electrochemical cell is a secondary battery (col. 1: 19-27).

Claim 10: Ohsawa et al. disclose that the electrochemical cell is a capacitor (col. 1: 19-27).

Claim 11: Ohsawa et al. disclose an electrode comprising:
a conductive thin sheet (1 mm {1000 μ m}) having a porous structure (abstract and col. 11: 44-47);

proton-conducting particles (col. 8: 17-28 which discloses the same particles as that instantly disclosed); and

conductive auxiliary particles (col. 6: 65-col. 7: 2), wherein the proton-conducting particles and the conductive auxiliary particles are dispersed and filled uniformly in the porous structure of the conductive thin sheet (col. 8: 66-col. 9: 1).

Claim 12: Ohsawa et al. disclose that the conductive thin sheet has a porosity of 50 to 85 % before filling (col. 3: 45-46).

Claim 15: Ohsawa et al. disclose that the conductive thin sheet is a carbon fiber nonwoven sheet (col. 3: 3-6).

Claim 16: Ohsawa et al. disclose an electrochemical cell comprising electrodes, wherein at least one of the electrodes is the electrode is as set forth above in claim 2 (see also col. 9: 40-46).

Claim 17: Ohsawa et al. disclose an electrochemical cell comprising electrodes, wherein at least one of the electrodes is the electrode is as set forth above in claim 3 (see also col. 9: 40-46).

Claim 20: Ohsawa et al. disclose an electrochemical cell comprising electrodes, wherein at least one of the electrodes is the electrode as set forth above in claim 6 (see also col. 9: 40-46).

Claim 21: Ohsawa et al. disclose an electrochemical cell comprising electrodes, wherein at least one of the electrodes is the electrode as set forth above in claim 7 (see also col. 9: 40-46).

Claim 22: Ohsawa et al. disclose an electrochemical cell for a secondary battery, which comprises the electrode as set forth above in claim 7 (see also (col. 1: 19-27)).

Claim 23: Ohsawa et al. disclose an electrochemical cell for a capacitor, which comprises the electrode as set forth above in Claim 7(see also (col. 1: 19-27)).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 4-5, 13-14, 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohsawa et al. as applied to claims 1 and 11 above.

Claim 4: Ohsawa et al. disclose a porous conductive substrate having a porosity of 50 to 85 %, before filling, impregnated (i.e. filled) with active material. It would have been obvious to one of ordinary skill in the art that the filling rate would be 5% or more.

Claim 5: Ohsawa et al. disclose conductive auxiliary and electrode active material

But is silent as to the rate of the conductive auxiliary to the electrode active material being 50 % by weight or less. However, it would have been within the skill of one having ordinary skill in the art at the time the invention was made to have modified the weight of the conductive auxiliary to the weight of the electrode active material depending upon the desired conductivity, electrode resistivity, use of the electrode (i.e. in a battery or a capacity), charge/discharge characteristic, etc.

Claim 13: Ohsawa et al. disclose a conductive thin sheet having a porosity of 50 to 85 %, before filling and filled with the proton-conducting particles and the conductive auxiliary particles. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have expected the filling rate to be at least rate of 5 % or higher depending upon the use of the electrode (i.e. a secondary battery or capacitor, and the desired performance characteristics) and whether the porous sheet is filled directly or coated (col. 8: 39-48).

Claim 14: Ohsawa et al. are silent as to the conductive auxiliary particles being less than the proton-conducting particles by weight. However, it would have been within the skill of one having ordinary skill in the art at the time the invention was made to have less conductive

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auxiliary particles depending upon the desired conductivity, use of the electrode (i.e. in a battery or a capacity), charge/discharge characteristic, etc.

Claim 18: Ohsawa et al. disclose an electrochemical cell comprising electrodes, wherein at least one of the electrodes is the electrode as set forth above in Claim 4 (see also col. 9: 40-46).

Claim 19: Ohsawa et al. disclose an electrochemical cell comprising electrodes, wherein at least one of the electrodes is the electrode as set forth above in Claim 5 (see also col. 9: 40-46).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas H. Parsons whose telephone number is (571) 272-1290. The examiner can normally be reached on M-F (7:00-4:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER

Thomas H Parsons
Examiner
Art Unit 1745
